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minute crystals of red-brown siderite and the latter passes into limonite. With these one sees sheaf-like aggregations of a zeolite, which from the form of single crystals appears to be Thompsonite. Some of these crystals are beautifully transparent, with tetragonal habitus—two opposite prismatic faces are striated longitudinally (pinakoïd), basis and macrodome are found on all individuals. The crystals are, however, very small and cannot be measured satisfactorily. Analyses have not been made. The determinations are not, therefore, absolute, except in the case of chabazite. The resemblance of this occurrence to that of Baltimore is very striking. Thompsonite is new for Pennsylvania, chabazite and stilbite for Leiperville, in the speaker's knowledge.

Chapter V, Article 4, of the By-Laws, was amended by adding the following:—But Sections may admit persons not members of the Academy to be Contributors under such rules and on such terms as the Section may determine, always provided, that a Contributor shall not be eligible to office in a Section, or to vote on any question; and also provided, that the rights and privileges of a Contributor shall be restricted to attendance at the meetings of the Section, to the reading of original scientific papers, and to taking part in scientific discussions and proceedings exclusively, and that a Contributor shall have no other right or privilege whatever in the Academy.

F. Lynwood Garrison and Mrs. H. Carvill Lewis, were elected members.

December 5.

Mr. Thos. Meehan, Vice-President, in the chair.

Twenty-five persons present.

A paper, entitled "On Uintatherium, Bathmodon and Triïsodon," by Edw. D. Cope, was presented for publication.

December 12.

The President, Dr. Leidy, in the chair.

Forty-five persons present.

The following papers were presented for publication:—

"An Identification of the Species of Fishes described in Shaw's General Zoology," by Jos. Swain.

"On the Value of the Nearctic as one of the Primary Zoological Regions," by Angelo Heilprin.

On Remains of Horses.—Prof. Leidy directed attention to some specimens, which were recently sent to him for examination by the Secretary of the Smithsonian Institution. He remarked that it was commonly believed that the horse was not living in America when this was discovered by Europeans, but there is abundance of evidence to prove the former existence in this country of many species and genera of closely related forms. Among the remains of these some are undistinguishable in anatomical characters and size from the corresponding parts of the domestic horse. As this during the past four centuries has become widely and abundantly distributed over both continents, its remains have become buried everywhere, and often in the older deposits, where they are mingled with the fossils pertaining to the latter. Under these circumstances it is commonly difficult and frequently impossible to determine whether specimens submitted to us for examination are to be regarded as true fossils or comparatively recent remains. Such is the character of the specimens now exhibited.

Several consist of fragments (No. 16537–8) of the left ramus of the mandible of a horse. They were obtained at Aspinwall, Panama, by Capt. J. M. Dow; but no reference is made to the nature of the deposit in which they were found. They are well preserved, firm in texture, without fissures, and stained brown from ferruginous infiltration. One of the fragments contains the molar series nearly perfect except the first and last. They are more than half worn away and agree closely with those of the domestic horse in the same condition.

Other specimens consist of an astragalus and a first phalanx (16602, 16604) of a horse of the ordinary size. They were obtained by Mr. J. F. Le Baron, U. S. Assist. Eng., on Peace Creek, Florida, in 1881, during the survey of a steamboat route from the St. John's River to Charlotte harbor. They were discovered in association with remains of the elephant, *Elephas columbi*, and a huge turtle remarkable for the thickness of its shell, etc. The specimens are black and well preserved, but exhibit no peculiarity.

The remaining specimens are of more interest than the preceding, and consist of two bone fragments and three teeth (Nos. 1–5, 11629), which were obtained by Mr. Ellis Clarke, Jr., from near Lacualtipan, Hidalgo, Mexico. According to the accompanying letter, they were discovered in a thirty inch clay bed, lying between an upper four inch, and an under four feet stratum of coal, overlying a limestone with small shells. The fossils belong to the three-toed horse, *Hippotherium* (*Hipparion*), and are probably of pliocene age, though they may be miocene.

Of the bone fragments one is the upper extremity of a metain quite recent times. It is unnecessary here, in support of this fact, to more than mention the modern coins and other objects so frequently found in a compact gravel firmly cemented.

Again, there is no sufficient evidence that the gravel in which many of these relics were reported to have been found was undisturbed. Most of the implements were found on the banks of streams, some of them in the bottom of river-beds, in both of which places landslips may have occurred, while the few found in shafts have never been satisfactorily demonstrated to lie in a position which could not have been disturbed.

The very fact that these relics all occur in a gold-bearing gravel may indicate the method by which many of them were buried. That gold-mining was carried on in these same gravels by the aborigines upon an extensive scale is well attested. Schoolcraft describes an ancient shaft which penetrated Table Mountain to a depth of 210 feet, at the bottom of which were human bones and implements. This is the very locality where a number of implements and a skull of supposed pliocene man were afterwards found. Other authorities might be quoted to show the numerous mining operations of the aborigines. The mortars already described were probably used in the process of extracting gold from the gravel.

Another point of importance is the fact that the earliest relics of man, either in the river gravels of Europe and Great Britain, or in those of the Delaware, are of an ancient type, unlike those of more recent times. These *palæolithic* implements, with the associated bones of animals now extinct, are the most certain evidences of primeval man, and belong to the age immediately following the glacial epoch. It is not, therefore, probable that the highly fashioned implements of California, having the most neolithic type, belong to a race of pre-glacial men anterior to those of the river gravels of Europe. The argument from analogy is so strong against the great antiquity of the Californian relics, that evidence of the most satisfactory kind must be required to support such a conclusion.

The following was ordered to be published :—